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10/814,528	03/31/2004	Tom E. Pearson	ITL.1105US (P18745)	6903
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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/814,528  
Filing Date: March 31, 2004  
Appellant(s): PEARSON ET AL.

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Timothy N. Trop  
For Appellant

**EXAMINER'S ANSWER**

**MAILED**

**AUG 08 2007**

**GROUP 2800**

This is in response to the appeal brief filed May 21, 2007 appealing from the Office action mailed February 5, 2007.

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**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,877,990	Liao et al.	4-2005
5,626,280	Ciambrone	5-1997
6,626,691	Yu	9-2003
5,262,594	Edwin et al.	11-1993

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**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. Claims 1-5, 8-14, 17-21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) in view of Ciambrone (US 5,626,280).

With respect to claim 1: Liao et al. shows An integrated circuit socket **1** comprising: a socket housing **21**; a hinged cover **25** secured to the housing; and a cap **3** removably secured to the cover (Col. 4, lines 13, 14).

However Liao et al. does not show the cap **3** as infrared transmissive.

Ciambrone shows in analogous art, a cap **10** which is infrared transmissive (Col. 1, lines 8-9).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material as taught by Ciambrone (Col. 1, lines 38-40) for the cap of Liao et al. wherein the cap may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claim 2: Liao et al. shows the cap **3** includes a plurality of openings **302** and **303** to allow the passage of heated air (Col. 4, lines 6, 7).

With respect to claim 3: Liao et al. shows spring catches **307** and **308** on opposed ends of the cap to removeably secure the cap to the cover.

With respect to claims 4 and 5: Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambrone further teaches the cap **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone for the reasons previously stated, would permit transmission of *at least* 80% and 95% of incident infrared radiation providing the advantages discussed above.

With respect to claim 8: Liao et al. shows the cap **3** includes standoffs **309** which space the cap from the cover.

With respect to claim 9: Liao et al. shows the cap **3** has a curved lower surface **309**.

With respect to claim 10: Liao et al. shows the cap **3** includes at least two apertures **305** and downwardly extending prongs **308** extending away from the apertures to reflect incident radiation passing through the apertures.

With respect to claim 11: Liao et al. shows a cap **3** for an integrated circuit socket comprising: a body **30** having apertures **302**, **303**, and tabs **307**, **308** coupled to the body to removeably secure the body to an integrated circuit socket.

However Liao et al. does not show the body formed of a material that is infrared transmissive.

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Ciambrone shows in analogous art, a cap **10** which is infrared transmissive (Col. 1, lines 8-9).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material as taught by Ciambrone (Col. 1, lines 38-40) for the cap of Liao et al. wherein the cap may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claim 12: Liao et al. shows tabs **307**, **308** include spring catches on opposed ends of the cap to removeably secure the cap to the socket.

With respect to claims 13 and 14: Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambrone further teaches the cap **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone for the reasons previously stated, would permit transmission of *at least* 80% and 95% of incident infrared radiation providing the advantages discussed above.

With respect to claim 17: Liao et al. shows the cap **3** includes standoffs **309** which space the cap from the cover.

With respect to claim 18: Liao et al. shows the cap **3** has a curved lower surface **309**.

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With respect to claim 19: Liao et al. shows the cap **3** includes at least two apertures **305** and downwardly extending prongs **308** extending away from the apertures to reflect incident radiation passing through the apertures.

With respect to claim 20: Liao et al. shows the cap **3** includes guides **309** and **305** to guide the cap into alignment with the socket.

With respect to claim 21: Liao et al. shows a method comprising: securing a cap to an integrated circuit socket (Col. 3, lines 58-67) and (Col. 4, lines 1, 2); and surface mounting the socket to a printed circuit board (Col. 4, lines 6, 7).

However Liao et al. does not show cap **3** as transmissive to infrared radiation nor does Liao et al. show the surface mounting method as specifically exposing the cap and the socket to infrared energy.

Ciambrone teaches the cap **10** material is transparent to infrared radiation (Col. 1, lines 41, 42) specifically for use in an infrared reflow soldering (Col. 3, lines 20-23).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material as taught by Ciambrone (Col. 1, lines 38-40) for the cap of Liao et al. wherein the cap may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claim 23: Liao et al. shows the cap **3** includes a plurality of openings **302** and **303** to allow the passage of heated air (Col. 4, lines 6, 7).

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With respect to claim 25, Liao et al. as modified by Ciambone has been discussed above. However Liao et al. does not show the cap 3 as transmissive to infrared radiation.

Ciambone further teaches the cap 10 material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambone for the reasons previously stated, would permit transmission of *at least* 80% of the incident infrared radiation providing the advantages discussed above.

B. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) and Ciambone (US 5,626,280) as applied to claim 21 above, and further in view of Edwin et al. (US 5,262,594). Liao et al. as modified by Ciambone has been discussed above.

Ciambone specifically states applicability and benefit is derived to any manufacturing process using infrared reflow soldering (Col. 2, lines 10-15).

However neither Liao et al. nor Ciambone disclose the origins of heat produced in a reflow oven.

Edwin et al. teaches in analogous art the use of a reflow oven and specifically cites the oven produces both infrared and convective heating (Col. 6, lines 8-10).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the welding in Liao et al. (Col. 4, line 6) and the infrared reflow soldering referred to in Ciambone (Col. 2, lines 10-15) are synonymous with the IR oven teachings of Edwin et al. which shows an IR oven produces both infrared and convective heating (Col. 6, lines 8-10).



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C. Claims 6, 7, 15, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) and Ciabrone (US 5,626,280) as applied to claims 1, 11 and 21 above, and further in view of Yu (US 6,626,691). Liao et al. as modified by Ciabrone has been discussed above.

With respect to claims 6 and 15; neither Liao et al. nor Ciabrone show or teach the cap is formed of plastic.

Yu teaches in analogous art the cap 40 is formed from plastic (Col. 2, line 64).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a plastic material as taught by Yu to further modify the infrared transmissive cap of Liao et al. / Ciabrone to produce a relatively inexpensive cap that may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claims 7, 16 and 24; the cap of Liao et al. / Ciabrone further modified by Yu does not explicitly teach a (*translucent*) red plastic.

It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use, the problem(s) to be solved and the criteria of the objectives to be met. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

#### **(10) Response to Argument**

Regarding Brief page 11, Section A, paragraph 2, Appellant's argument pertaining to the cited reference (Liao) teaching away from the problem solved by the Appellant's instant invention. The Examiner respectfully maintains the Liao reference recognizes the problem associated with the build-up of heat during the course of reflow with respect to the pick up cap/cover as evidenced by Liao employing holes 302, 303 in the cap to facilitate dissipation of heat generated during the course of reflow.

Regarding Brief page 11, Section A, paragraph 3, Appellants' argument pertaining to the cited reference (Ciambrone) not having anything to do with an integrated socket. The Examiner respectfully maintains the Ciambrone is an applicable reference given the summary of the invention (Col. 2, lines 10-13), quoted here for your convenience; "The present invention may be of benefit to any manufacturing process using infrared reflow soldering or leaded and combination chip and leaded components."

Regarding Brief page 11, Section A, paragraph 4, Appellant argues there exists no rationale to use the material taught by Ciambrone to modify the cap of the Liao integrated circuit socket. Appellant contends the Liao cap is already capable of being recycled, reformed and reusable. Nowhere does Liao disclose the material used to fabricate the pick up cap, therefore the contention that Liao's cap can be recycled, reformed and reused is complete conjecture on the part of the Appellant.

Regarding Brief page 11, Section A, paragraph 5, Appellant argues the cited reference (Liao) does not recognize the problem at hand, that being the *cover* would heat up in the course of reflow. This statement made by the Appellant is irrelevant. The *cover* of the instant invention and the Liao reference are identical and this has never been disputed in the history of the prosecution thus far.

For these reasons, it is respectfully requested, the rejection of claims 1 and 11 are sustained.

Regarding Brief page 12, Section A, discussing claim 21, Appellant argues the primary reference Liao and the secondary reference Ciambrone neither individually nor combined teach(es) exposing *both* the cap *and* the socket to infrared energy, yet Ciambrone teaches the cap **10** material is transparent to infrared radiation (Col. 1, lines 41, 42) specifically for use in an infrared reflow soldering (Col. 3, lines 20-23).

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To which the Appellant further argues that Ciabrone has nothing to do with a socket. The Examiner respectfully maintains the Ciabrone is an applicable reference given the summary of the invention (Col. 2, lines 10-13), quoted here for your convenience; "The present invention may be of benefit to any manufacturing process using infrared reflow soldering or leaded and combination chip and leaded components."

The Appellant concludes the argument regarding the rejection of claim 21 stating that neither the primary nor secondary reference, individually or combined, suggest mounting that socket to a printed circuit board. The "Field of the Invention" taken from the "BACKGROUND OF THE INVENTION" within the primary reference, Liao, is quoted below:

"The present invention relates to a land grid array (LGA) connector assembly which comprises an LGA connector and a pick up cap, the pick up cap being mounted to the connector for providing a flat top surface to be engaged by a vacuum suction device, whereby the LGA connector assembly can be moved onto a circuit substrate such as a printed circuit board (PCB) on which the connector is to be mounted."

From this it seems rather clear the intent is to ultimately mount the socket to a printed circuit board. For these reasons, it is respectfully requested, the rejection of claim 21 is sustained.

Regarding Brief page 12, Section B, discussing claim 22, for the reasons set forth above it is respectfully requested the rejection is sustained.

Regarding Brief page 12, Section C, discussing claims 6, 7, 15, 16 and 24, for the reasons set forth above it is respectfully requested the rejection is sustained.

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**(11) Related Proceeding(s) Appendix**

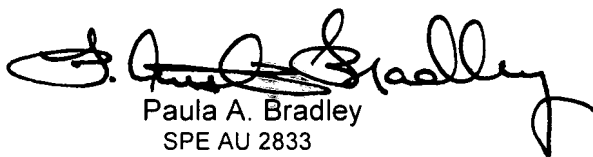
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

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